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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of

Peyravian *et al.*

Serial No.: 09/458,922

Filed: December 10, 1999

For: **TIME STAMPING METHOD EMPLOYING
USER SPECIFIED TIME**

Attorney's Docket No: 4541-003

Examiner: Dada, Beemnet W.


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Kathleen Koppen

APPEAL BRIEF

This Appeal Brief is being timely filed within the two-month period following the receipt of the Notice of Appeal by the Office. As such, no extension of time fees should be due. The Commissioner is authorized to charge the requisite fee pursuant to 37 C.F.R. §41.20 and any additional fees required or due for entry of this Brief to IBM's Deposit Account No. 09/0461.

(1) REAL PARTY IN INTEREST

The real party in interest is IBM Corp., the assignee of the present invention.

(2) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences to the best of Applicants' knowledge.

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(3) STATUS OF CLAIMS

A total of thirty (30) claims number 1-30 have been presented for examination, all of which are pending. All claims 1-30 stand rejected by the Examiner. Accordingly, Applicants appeal the rejection of claims 1-30.

(4) STATUS OF AMENDMENTS

There have been no amendments.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to a time-stamping protocol for time-stamping digital documents so that the time-stamped document can later be verified. The claimed invention presumes the existence of a trusted outside agency (TSA). *E.g., Spec., pg. 4, ll. 1-5.*

A document originator creates a time stamp receipt by combining a document or identifying data associated with the document (e.g., a unique hash value), and a time indication. Optionally, the time stamp receipt may also include data such as an identification number associated with the document originator and a sequential number. *E.g., Spec., pg. 6, ln. 10 – pg. 7, ln. 2.* After creating the time stamp receipt, the document originator forwards the time stamp receipt to TSA for validation. *E.g., Spec., pg. 7, ll. 3-5.* Upon receipt, the TSA computes an age value for the time stamp receipt by determining a difference between the time indication included in the time stamp receipt and a current time obtained from a trusted clock. *E.g., Spec., pg. 7, ll. 15-20.* If the computed age value falls within a specified range of the current date and time, the TSA cryptographically binds the time stamp receipt using, for example, a private key. *E.g., Spec., pg. 7, ln. 20 – pg. 8, ln. 13.* A copy of the bound time stamp receipt is then sent to the document originator, and may later be used by the public to verify the document. *E.g., Spec., pg. 8, ll. 13-17.*

(6) GROUNDS OF REJECTION

The Examiner rejected independent claims 1, 13, and 30 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,530,023 to Nissl et. al. (hereinafter "Nissl") in view of U.S. Patent No. 5,136,647 to Haber et. al. (hereinafter "Haber").

(7) ARGUMENTS RELATING TO THE §103(a) GROUND OF REJECTION

A. Nissl and Haber fail to teach or suggest, alone or in combination, claim 1.

Claim 1

Claim 1 is directed to a method for time-stamping a digital document at a trusted outside agency. For reference, claim 1 appears below.

1. A method for time stamping a document comprising:
receiving a time stamp receipt at an outside agency, said time stamp receipt including identifying data associated with said document and a time indication;
validating said time stamp receipt at said outside agency by comparing the time indication in said time stamp receipt to the current time; and
if said time stamp receipt is valid, binding at said outside agency said identifying data and said time indication using a cryptographic binding scheme.

According to claim 1, the outside agency receives a time-stamp receipt, and compares a time indication in the time stamp receipt to a current time. If a difference between the time indication in the time stamp receipt and the current time falls within a specified window, the TSA cryptographically binds the time stamp receipt. Note that the time stamp receipt includes the time indication when it is received at the TSA. Thus, the TSA is validating the time indication as it is received at the TSA.

The Nissl approach, in contrast, does not validate a received time indication. In contrast, Nissl discloses a method of validating a proposed absolute time for use in a time stamp that is to be transmitted to a receiving device. According to Nissl, a transmitting device determines two time values - a "standard time" derived from an external clock signal (e.g., a DCF77 signal transmitted in the Federal Republic of Germany), and a current time provided by an internal

clock. Prior to transmission of a message, the transmitting device computes a difference between these two times. If the two times are substantially similar to one another, the transmitting device incorporates the standard time value into the time stamp, and sends the time stamped message to the receiving device. *Nissl*, col. 6, ll. 3-24; *see also*, col 7, ll. 13-41.

This method of *Nissl* differs markedly from the method of claim 1. Specifically, the time that is subject to validation in *Nissl* is a time indication that will be incorporated into a time stamp that will be transmitted to a receiving device. *Nissl* does not teach or suggest validating the time indication in a time stamp that is received by the receiving device. *Nissl*, col. 6, ll. 14-20. Indeed, this “pre-transmission verification” of *Nissl* is inapposite to the requisite “post-transmission verification” of claim 1. That is, the explicit transmitter-side verification negates the need for the receiver-side verification as recited by claim 1.

Haber also fails to teach or suggest validating the time indication in the received time stamp receipt. According to Haber, a document author must request a time-stamp receipt from the TSA. The author includes a hash value of the document in the request. Upon receipt of the request, the TSA creates the time-stamp receipt by concatenating the hash value received in the request with one or more time indications. Notably, the TSA does not receive these time indications in a time stamp receipt sent by the document author. Rather, they are explicitly created by the TSA independently of, and after receipt of, the time stamp request. *Haber*, col. 6, ll. 1-24. Whatever information the requestor sends to the TSA in Haber does not include a time indication.

To create the time stamp receipt, the TSA in Haber simply concatenates information received in the time stamp request with a plurality of absolute time values. The absolute time values include the current time (t_k) and the times associated with documents received by the TSA both *before* (t_{k-1}) *and after* (t_{k+1}) the document being processed. This merely creates a time stamp receipt having a plurality of sequential, absolute time values that “fix” the document being processed in “a continuum of time.” *Haber*, col. 3, ln. 68 – col. 4, ln. 33. Haber never suggests

comparing these time values and the current time to validate any of the time indications, and further, neither does the Examiner.

The TSA in Haber may receive a time indication as part of a time stamp receipt in an embodiment that employs one or more randomly selected independent agents. However, even in this embodiment, Haber fails to teach or suggest that the TSA validates the received time indication by comparing the time indication in the time stamp receipt to the current time. The randomly selected agents simply add absolute times to the time stamp receipt – independently of each other - before returning the time stamp receipt to the TSA. *Haber*, col. 8, ll. 17-25. Neither Haber nor the Examiner ever suggests that the TSA compares the received time indications (from the independent agents) and the current time to validate the time indications.

Simply put, neither Nissl nor Haber teach or suggest, alone or in combination, “validating [the] time stamp receipt at [the] outside agency by comparing the time indication in [the] time stamp receipt to the current time.” Therefore, the § 103 rejection necessarily fails as a matter of law.

Notwithstanding the above, the § 103 rejection also fails because the Examiner has failed to put forth a *legally sufficient* motivation to combine the references. The Examiner asserts that one skilled in the art would be motivated to combine Nissl and Haber, and cites column 2 of Haber, lines 45-49 as specific support for the alleged motivation. “In essence, the method transfers control of the time-stamping step from the author to an independent agent and removes from the author the ability to influence the agent in the application of other than a truthful time stamp.” *Haber*, col. 2, ll. 45-49. The Examiner contends that this particular passage provides a motivation to combine Nissl and Haber because it teaches “transferring control of the time-stamping step from the author to an independent agent, thereby increasing the creditability of document authentication.” Office Action dated December 1, 2004, p. 5, ¶14. This reasoning is conclusory and unsubstantiated by the references.

First, the reference to Haber alone teaches transferring control of the time-stamping step to the TSA. Haber unequivocally presents this method as being so effective that it negates the need for cryptographic binding. "So effective is such a sequential fixing of a document in the time stream that the TSA signature could be superfluous in actual practice." *Haber*, col. 4, ll. 30-33 (emphasis added). One skilled in the art would not be motivated to add Nissl (which uses binding) to Haber to render the document authentication any more credible than Haber already provides.

Second, Nissl teaches that a transmitting device verifies a time indication prior to transmitting a time stamp receipt to a receiving party. Thus, any receiving device in Nissl is meant to receive an already-verified time indication. The passage of Haber cited to support the motivation, however, explicitly teaches away from receiving any time indication and time stamp receipt from the author. Even where the TSA in Haber receives a time indication from the independent agents, the self-proclaimed effectiveness of the sequential time-fixing process of Haber means that one skilled in the art would not need to validate the time indications.

This sort of conclusory, unsubstantiated assertion disguised as a motivation to combine simply is not permitted under the law. The Examiner must provide "an explanation based on logic and sound scientific reasoning that will support a holding of obviousness." *Ex parte Levengood*, 28 USPQ2d 1300, 1301 (Bd. Pat. App. & Inter. 1993) (emphasis added).

To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985) (emphasis added), *See also*, MPEP § 2142 ("The examiner bears the initial burden of factually supporting any prima facie case of obviousness) (emphasis added). The references do not support the Examiner's reasoning, and as such, the alleged motivation to combine the references falls far short of what is required under the law. Accordingly, the §103 rejection fails as a matter of law.

Claim 13

Claim 13 is also directed to a method for time-stamping a digital document at a trusted outside agency. The Examiner also rejected claim 13 under 35 U.S.C. §103(a) over Nissl in view of Haber for the same reasons as those stated above with respect to claim 1. For reference, claim 13 appears below.

13. A method for time stamping a document comprising:
creating a time stamp receipt including identifying data associated with said document and a time indication;
transmitting said time stamp receipt to an outside agency; and
cryptographically binding at said outside agency said identifying data and said time indication.

Claim 13, also calls out that the time stamp receipt is first created and sent to the trusted agency. The time stamp receipt includes identifying data and a time indication that is cryptographically bound at the outside agency. For the reasons stated above, the cited references fail to show or suggest, alone or in combination, claim 13.

Claim 19

Claim 19 is also directed to a method for time-stamping a digital document at a trusted outside agency. Claim 19 stands rejected under 35 U.S.C. §103(a) over Nissl in view of Haber for the same reasons as those stated above with respect to claim 1. For reference, claim 19 appears below.

19. A method for time stamping a document comprising:
creating a time stamp receipt including identifying data associated with said document and a time indication;
transmitting said time stamp receipt to an outside agency;
validating said time stamp receipt at said outside agency by comparing the time indication in said time stamp receipt to the current time; and
if said time stamp receipt is valid, binding at said outside agency said identifying data and said time indication using a cryptographic binding scheme to generate a certified time stamp receipt.

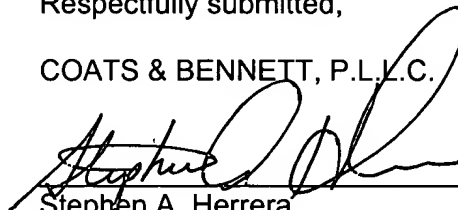
Claim 19, also calls out that the time stamp receipt is first created and sent to the trusted agency where the identifying data and a time indication in the time stamp receipt are cryptographically bound at the outside agency. For the reasons stated above, the cited references fail to show or suggest, alone or in combination, claim 19.

Conclusion

For the reasons set forth above, none of the references, alone or in combination, teach or suggest validating a time stamp receipt at an outside agency by comparing a time indication received with the time stamp receipt to a current time, as recited in the claims. Moreover, the alleged motivation to combine is conclusory and unsupported by the cited references, and as such, falls far short of the *legally sufficient* motivation required under the law. Accordingly, all claims 1-30 being appealed herein are patentable over the cited art.

Respectfully submitted,

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(8) CLAIMS APPENDIX

1. A method for time stamping a document comprising:
receiving a time stamp receipt at an outside agency, said time stamp receipt including
identifying data associated with said document and a time indication;
validating said time stamp receipt at said outside agency by comparing the time indication in
said time stamp receipt to the current time; and
if said time stamp receipt is valid, binding at said outside agency said identifying data and
said time indication using a cryptographic binding scheme.
2. The time stamping method of claim 1 further including transmitting said binding information
to a designated party.
3. The time stamping method of claim 1 wherein said identifying data comprises a digital
representation of at least a portion of said document.
4. The time stamping method of claim 3 wherein said identifying data comprises a digital
sequence derived by application of a deterministic function to at least a portion of said
document.
5. The time stamping method of claim 4 wherein said digital sequence is a hash value derived
by application of a one-way hashing function to at least a portion of said document.
6. The time stamping method of claim 1 wherein said time stamp receipt further includes an
identification number associated with the document originator

7. The time stamping method of claim 6 wherein said time stamp receipt further includes a sequential record number.
8. The time stamping method of claim 7 wherein the step of validating said time stamp receipt includes comparing said identification number and sequential record number with data maintained by the outside agency.
9. The time stamping method of claim 1 wherein said binding step includes signing a combination of said identifying data and said time indication using a digital cryptographic signature scheme.
10. The time stamping method of claim 1 wherein said binding step includes computing a message authentication code on a combination of said identifying data and said time indication using a secret key controlled by said outside agency.
11. The time stamping method of claim 1 wherein said binding step includes computing a hash value on a combination of said identifying data and said time indication.
12. The time stamping method of claim 1 wherein said binding step includes encrypting a combination of said identifying data and said time indication using a secret key controlled by said outside agency.

13. A method for time stamping a document comprising:
creating a time stamp receipt including identifying data associated with said document and a time indication;
transmitting said time stamp receipt to an outside agency; and
cryptographically binding at said outside agency said identifying data and said time indication.
14. The time stamping method of claim 13 wherein said identifying data comprises a digital representation of at least a portion of said document.
15. The time stamping method of claim 13 wherein said identifying data comprises a digital sequence derived by application of a deterministic function to at least a portion of said document.
16. The time stamping method of claim 15 wherein said digital sequence is a hash value derived by application of a one-way hashing function to at least a portion of said document.
17. The time stamping method of claim 13 wherein said time stamp receipt further includes an identification number associated with the document originator.
18. The time stamping method of claim 14 wherein said time stamp receipt further includes a sequential record number.

19. A method for time stamping a document comprising:
- creating a time stamp receipt including identifying data associated with said document and a time indication;
 - transmitting said time stamp receipt to an outside agency;
 - validating said time stamp receipt at said outside agency by comparing the time indication in said time stamp receipt to the current time; and
 - if said time stamp receipt is valid, binding at said outside agency said identifying data and said time indication using a cryptographic binding scheme to generate a certified time stamp receipt.
20. The time stamping method of claim 19 further including transmitting said binding information to a designated party.
21. The time stamping method of claim 19 wherein said identifying data comprises a digital representation of at least a portion of said document.
22. The time stamping method of claim 21 wherein said identifying data comprises a digital sequence derived by application of a deterministic function to at least a portion of said document.
23. The time stamping method of claim 22 wherein said digital sequence is a hash value derived by application of a one-way hashing function to at least a portion of said document.
24. The time stamping method of claim 19 wherein said time stamp receipt further includes an identification number associated with the document originator

25. The time stamping method of claim 24 wherein said time stamp receipt further includes a sequential record number.
26. The time stamping method of claim 25 wherein the step of validating said time stamp receipt includes comparing said identification number and sequential record number with data maintained by the outside agency.
27. The time stamping method of claim 19 wherein said binding step includes signing a combination of said identifying data and said time indication using a digital cryptographic signature scheme.
28. The time stamping method of claim 19 wherein said binding step includes computing a message authentication code on a combination of said identifying data and said time indication using a secret key controlled by said outside agency.
29. The time stamping method of claim 19 wherein said binding step includes computing a hash value on a combination of said identifying data and said time indication.
30. The time stamping method of claim 19 wherein said binding step includes encrypting a combination of said identifying data and said time indication using a secret key controlled by said outside agency.

(9) EVIDENCE APPENDIX

There is no further evidence not contained in the prosecution history.

(10) RELATED PROCEEDINGS APPENDIX

There are no related proceedings.